BACKGROUND

Intensive care is an important part of any tertiary care hospital. It consists of continuous monitoring of vital parameters and round the clock availability of life support. Estimating the patient prognosis and mortality helps in improving the quality of patient care and better communication about patients status. Clinical severity scores helps in objective assessment of patients' prognosis various scoring systems were introduced for the same purpose. A perfect scoring system is yet to be found.

Also only a few number of studies have been conducted comparing the efficacies of different scores. Hence this attempt of comparing APACHE-II and APACHE-IV to predict mortality in the surgical intensive care unit of Coimbatore Govt Medical College.

STUDY DESIGN

Diagnostic test evaluation

MATERIALS AND METHODS

100 Patients admitted to the surgical ICU of Coimbatore Medical College Hospital following elective or emergency laparotomy were enrolled for the study. Data were collected after informed consent and entered in Xcel format. Worst values in the first 24 hrs of admission were taken APACHE-II and APACHE-IV scores were calculated and compared

DISCUSSION

The study population was a semi urban one admitted to surgical ICU of CMCH, COIMBATORE. The median age group was 20-50

Out of 100 72 were males, 28 females. There were no correlation between sex and mortality. The most common indication for laparotomy was perforation peritonitis almost all the cases were operated as emergency.

The total mortality was 33 out of 100.

Both mean APACHE II and APACHE IV score were significantly higher among nonsurvivors than survivors, which correlated with other studies. Acute Physiology and Chronic Health Evaluation II score observed in our study ranged from 6.08 TO 34. With mean score of 17.84 ± 6.0 which was comparable to that reported from India, Bangladesh and Turkey. Survivors had lower mean APACHE II score compared with nonsurvivors, which was statistically significant (P = 0.001) A. Mortality increased with increasing APACHE II score, which was also statistically significant (P <.05). Similar results were found in other studies. Acute Physiology and Chronic Health Evaluation IV score ranged from 40.8 to 151.5 in our study with a mean of 91.68 ± 22.05, which were comparable to that reported previously Survivors had lower mean APACHE IV score compared to nonsurvivors, which was statistically significant (P < 0.05) as found in other studies. Mortality increased with increasing APACHE IV score, which was also statistically significant (P < 0.05) as observed in other studies.

The bivariate analysis showed no statistically significant correlation of mortality with age group and sex as observed in other studies. However the association of initial GCS value, mean Billirubin value, Inotropic and mechanical ventilator support [Table 2], high APACHE II score and APACHE IV score were statistically significant with mortality (P < 0.005).

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Area under ROC curve observed for APACHE II model was 0.7544 which were similar as reported before. Area under ROC curve observed in our study for APACHE IV was 0.8625.

The discrimination of APACHE IV model was better than APCHE II model in our study.

Acute Physiology and Chronic Health Evaluation IV model better predict mortality rate than APACHE II scoring system in our ICU. The reason could probably be the consideration of mechanical ventilation support, patient source prior to ICU admission, disease specific subgroup analysis and specific reason for ICU admission.

CONCLUSION

According to this study, acute Physiology & Chronic health evaluation iv model better predicts mortality when compared to APACHE II Scoring system in surgical ICU. It can be due to consideration of mechanical ventilation, patient source prior to admission, disease specific sub group analysis.

Area under ROC curve for APACHE II was 0.7544 vs 0.8625 for APACHE IV, which makes APACHE IV a better predictor for surgical ICU mortaility.

Better sensitivity and specficity cut offs for mortality prediction were obtained for APACHE IV.

KEY WORDS

Acute Physiology and Chronic Health Evaluation –II, Acute Physiology And Chronic Health Evaluation –IV, Surgical ICU, Mortality Scoring System